

**5.16.42 SIEVE ANALYSIS FOR ACCEPTANCE OF LIME OR CEMENT TREATED SOILS (Kansas Test Method KT-42)**

**a. SCOPE**

**a.1.** This method of test covers the procedure for determining the amount of material retained on the 50 mm, 37.5 mm, and the 4.75 mm sieves for lime treated soils.

**a.2.** This method of test covers the procedure for determining the amount of material retained on the 37.5 mm and the 12.5 mm sieves for cement treated soils.

**b. REFERENCED DOCUMENTS**

**b.1**AASHTO M 92; Wire-Cloth Sieves for Testing Purposes

**b.2.** AASHTO M 231; Balances Used in the Testing of Materials

**b.3.** KT-2; SIEVE ANALYSIS OF AGGREGATES

**c. APPARATUS**

**c.1.** The balance shall conform to the requirements of AASHTO M 231 for the class of general purpose balance required for the principal sample mass being tested.

**c.2.** Sieves meeting AASHTO M 92 of specified sizes for the soil being tested.

**d. SOIL SAMPLES**

**d.1.** Obtain samples of road mixed material from the subgrade or borrow area. The original sample before splitting shall weigh approximately 35 kg (77 lbs).

**d.2.** Reduce sample by quartering or splitting to a mass of not less than 15 000 g (33 lbs). Exercise extreme care to prevent segregation and/or degradation during the reducing operation.

**e. TEST PROCEDURE FOR LIME TREATED SOIL**

**e.1.** The sample shall be weighed and sieved through a series of sieves to include, 50 mm, 37.5 mm, 12.5 mm, 9.5 mm, and 4.75 mm.

**e.2.** The sample shall be sieved in accordance with **KT-2**.

#### **f. TEST PROCEDURE FOR CEMENT TREATED SOIL**

**f.1.** The sample shall be weighed and sieved through a series of sieves to include, 37.5 mm and 12.5 mm

**f.2.** The sample shall be sieved in accordance with **KT-2**.

#### **g. CALCULATION FOR LIME TREATED SOILS**

**g.1.** The percent retained on the 50 mm, 37.5 mm, and 4.75 mm<sup>a</sup> sieves is calculated as follows:

$$\text{Percent Retained} = \frac{100(A)}{B}$$

WHERE:

A = Mass of the retained fraction of the original sample determined to within 0.1 % of the original sample mass as obtained by sieving over the specified sieve.

B = Original mass of the sample

NOTE a: The quantities retained on the 12.5 mm and 9.5 mm sieves must be added to the quantity on the 4.75 mm sieve when calculating percent retained.

#### **h. CALCULATION FOR CEMENT TREATED SOILS**

**h.1.** The percent retained on the 37.5 mm and 12.5 mm sieves is calculated as follows:

$$\text{Percent Retained} = \frac{100(A)}{B}$$

WHERE:

A = Mass of the retained fraction of the original sample determined to within 0.1 % of the original sample mass as obtained by sieving over the specified sieve.

B = Original mass of the sample